

Anatech USA, Model Hummer 8.1, DC sputtering high vacuum thin film deposition system with the following features and equipment. The process chamber will be configured for a “Sputter-Down” process with a substrate fixture assembly located beneath the sputtering sources.

General Description:

- Single source Planar Magnetron Sputtering system for Thin Film Deposition
- Cabinet dimensions: 21-inches wide x 25.5-inches deep x 48-inches high
- System overall height is determined by the final configuration
- Mechanical pump is mounted remotely, turbo pump is internally cabinet mounted
- Safety interlock for vacuum and power

Chamber: 304 Stainless Steel cylindrical type high vacuum deposition chamber.

- Dimensions: 12-inches diameter x 16-inches high
- Full opening door with view port
- Electro Polished
- One (1) 4-inch diameter view port in the door
- One (1) View port shutter with manual actuation
- Chamber can be lifted off base plate for maintenance

Process Chamber will have the following features:

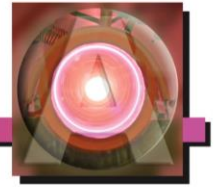
- One (1), 4-inch diameter US Inc. model MAK-4, “Flex-Mounted” Magnetron sputtering source
- One (1), Source Shutter. Pneumatically operated
- One (1) Base plate machined from 6061-T6 aluminum. Base plate accommodates turbo pump, valves, sensors and rotating stage
- One (1), Rotating stage 6061-T6 aluminum – 8-inches in diameter, counter bored to accept wafers. Customer to specify wafer size and quantity
- Stage rotation 0-20 RPM variable speed

Chamber Top Plate:

- Hinged chamber top plate allows easy access to the sputtering source
- Light weight aluminum 6061-T6 billet material
- Telescoping integral vertical support for hinged top

System Control:

- Siemens Industrial model S7-200 control package auto/manual operation system controller.
- Touch-screen control pad includes process set points
- Password protection for process and recipes



Power Requirement: DC Power Supply

- Basic power requirement 220-Volt, 50/60 Hz. service
- Advanced Energy – Model MDX 1.5, 1500-watt DC power supply

Pumping System:

- Mechanical Roughing Pump - Alcatel model 2005, 3.8 CFM
- Turbo Molecular Pump – Varian model V-81, 81 l/s pumping capacity.
- Turbo Pump Controller – Matching Varian V-81 turbo
- Turbo pump is an ISO-63 connection mounted to the aluminum base plate inside the vertical cabinet

Valves:

- Chamber roughing valve, stainless steel – KF flanges, pneumatic actuation
- Fore line isolation valve, stainless steel – KF flanges, pneumatic actuation
- Main vacuum valve will be an ISO flanges, pneumatic actuation
- Mass Flow Controller 100-SCCM for process gas - Argon sputtering

Gauging:

- Micro-Ionization Gauges – Vacuum gauge, located on the high vacuum chamber
- Mini-Convector Gauges – Control has two (2) convector gauges; one (1) located in the vacuum chamber, monitoring the roughing pressure and setting the high vacuum crossover pressure and one (1) for monitoring the turbo pump rough vacuum pressure